8   an epitaxial layer formed on [a silicon] the substrate [,

9   wherein said first vertical type bipolar transistor has] above

10   the datum surface and having an epitaxial impurity

11   concentration and an epitaxial conductive type;

12   a first embedded diffusion layer formed as part of a

13   first vertical type bipolar transistor in [an] a first upper

14   part of [said silicon] the substrate;

15   [and having an impurity concentration higher than that of

16   said epitaxial layer, said second vertical type bipolar

17   transistor having]

18   a second embedded diffusion layer formed as part of a

19   second vertical type bipolar transistor in [an] a second upper

20   part of [said silicon] the substrate,

21   [and of the same conductive type as said epitaxial

22   layer,]

23   wherein the second embedded diffusion layer includes an

24   impurity concentration [of said second embedded diffusion

25   layer] that is less than the impurity concentration of [said]

26   the first embedded diffusion layer, and

27   [and is approximately equal to or higher than the

28   impurity concentration of said epitaxial layer, wherein the

29   depth of said second embedded diffusion layer is deeper than

30   that of said first embedded diffusion layer, and]

31   wherein a peak position of an impurity concentration of

32   the first embedded diffusion layer resides at a first distance

33   from the datum surface of the substrate and a peak position of

34   an impurity concentration of the second embedded diffusion

35   layer resides at a second distance from the datum surface of

36   the substrate such that the first distance is greater than the

37   second distance.

38 [a region formed between said silicon substrate and a base

39 region of said second vertical type bipolar transistor is

40 deeper than that of a region formed between said silicon

41 substrate and a base region of said first vertical bipolar

42 transistor.]

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1   3. (Amended Two Times) A semiconductor device according

2 to claim 1,

3   wherein <u>the first embedded diffusion layer is formed at a</u>

4 <u>third distance from the datum surface of the substrate,</u>

5   <u>wherein the second embedded diffusion layer is formed at</u>

6 <u>a fourth distance from the datum surface of the substrate such</u>

7 <u>that the fourth distance is less than the third distance.</u>

8   [a depth of said first embedded diffusion layer is

9 shallower than a depth of said second embedded diffusion

10 layer.]

1   4. (Amended Two Times) A semiconductor device according

2 to claim 1, wherein the impurity concentration of [said] <u>the</u>

3 second embedded diffusion layer is at least [as great as]

4 <u>equal to</u> the impurity concentration of [said] <u>that portion of</u>

5 <u>the</u> epitaxial layer formed above [said] <u>the</u> second embedded

6 diffusion layer.

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1   6. (Amended Two Times) A semiconductor device according to

2 claim 1, <u>wherein the substrate is a single substrate, wherein</u>

3 <u>the datum surface is a bottom surface of the substrate, and</u>

4 wherein the impurity concentration of [said] <u>the</u> second

5 embedded diffusion layer is 1×10^{13} to 1×10^{15}.

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1   17. (Amended Two Times) A semiconductor device according

2 to claim 1, further comprising:

3   a third embedded diffusion layer having a conductive type

4   that is the opposite of the epitaxial conductive type; and

5   [a third vertical type bipolar transistor having]

6   a separating diffusion layer formed in [an] a third upper

7   part of [said silicon] the substrate [for separating from said

8   silicon] to separate from the substrate [a] the third embedded

9   diffusion layer [having an opposite conductive type to that of

10   said epitaxial layer].

1   19. (Amended One Time) A semiconductor device according

2   to claim 1, wherein [said] the epitaxial layer is an effective

3   collector layer.

1   20. (Amended One Time) A semiconductor device according

2   to claim 1, wherein [said] the second embedded diffusion layer

3   is an effective collector layer.

1   21. (New) A semiconductor device according to claim 1,

2   wherein the impurity concentration of the second embedded

3   diffusion layer is approximately equal to or higher than the

4   epitaxial impurity concentration at all distances from the

5   datum surface of the substrate beyond the peak position of the

6   impurity concentration of the second embedded diffusion layer.

1   22. (New) A semiconductor device according to claim 1,

2   wherein a peak position of an impurity concentration of the

3   second embedded diffusion layer resides at a distance from the

4   datum surface of the substrate that is approximately equal to

5   a location of the bottom of the first embedded diffusion layer

6   from the datum surface of the substrate.

1   23. (New) A semiconductor device according to claim 1,

2   wherein the first vertical type bipolar transistor defines a

3   voltage that is different than the a second vertical type

4   bipolar transistor,

5   wherein the substrate is a silicon substrate,

6   wherein the first embedded diffusion layer includes an

7   impurity concentration that is higher than the epitaxial

8   impurity concentration, and

9   wherein the second embedded diffusion layer defines a

10   conductive type that is the same as the epitaxial conductive

11   type.

G 8

Concl'd.